

## ABSTRACT

5 A purification system of exhaust gases in an internal  
combustion engine is disposed to a reaction furnace capable  
of reducing noxious components of the exhaust gases in an  
exhaust pipe of the internal combustion engine in order to  
purify the exhaust gases. The purification system comprises  
a reactor including a honeycomb carrier having a plurality  
of carrier cells, each of which a photocatalyst layer is  
10 coated, in the reaction furnace, and a plasma generating  
means having a plurality of electrode cells and mounted on  
an inner end and an outer end of the honeycomb carrier. The  
honeycomb carrier includes a photocatalyst layer coated on a  
wall surface of each of the carrier cells, the photocatalyst  
15 layer being activated by a plasma optical source. Further, a  
volume and a number of each of the electrode cells are  
varied depending upon the variation of that of each of the  
carrier cells, the carrier cells having 100 - 900 numbers  
per the unit area(1 inch X 1 inch). Furthermore, each of the  
20 electrodes of the plasma generating means is electrodes  
including a wire mesh formed by intersecting and arranging  
wires, the electrodes having a regular length in horizontal  
direction, a cross section of each of the electrodes being  
in the form of a honeycomb, a wire mesh roll, or a punched  
25 plate, and is closely or distantly disposed to each of the  
honeycomb carriers, and edges of each of the electrode cells

are arranged to be positioned at center of each of the carrier cells. The purification system further includes a plurality of reactors in the reaction furnace.

5 Representative drawing: Fig. 2